IN THE CLAIMS:

Please cancel claims 1-22.

Please add the following claims:

23. (New) A layer three device for connection to a computer network having at least one server, the layer three device having a plurality of interfaces each representing a logical connection to the computer network, the layer three device comprising:

a message transmitter connected to the computer network; and

a message receiver connected to the computer network,

wherein the message transmitter is configured and arranged to formulate and broadcast a discover message that includes a first option that is marked by the layer three device to indicate that it is requesting assignment of an overall Internet Protocol (IP) address, and the message receiver is configured and arranged to receive and examine an offer sent by the at least one server, that includes a proffered IP address for use with the plurality of interfaces of the layer three device as an overall IP address.

24. (New) A layer three device as defined in claim 23 wherein the message transmitter is configured and arranged to formulate and send to the at least one server a request message in response to the offer indicating that the layer three device has accepted the proffered overall IP address.

25. (New) A layer three device as defined in claim 24 wherein the message receiver is configured and arranged to receive and examine an acknowledgment from the at least one server that confirms its receipt of the request message.

26. (New) A layer three device as defined in claim 23 wherein the first option comprises a type field containing a predefined value that indicates that the discover message is a request for assignment of the overall IP address.

27. (New) A layer three device as defined in claim 23 wherein the offer message includes a second option marked by the at least one server to indicate the proffered IP address is the overall IP address.

28. (New) A layer three device for connection to a computer network having at least one server, the layer three device having a plurality of interfaces each representing a logical connection to the computer network, the layer three device comprising:

a message transmitter connected to the computer network; and

a message receiver connected to the computer network,

wherein the message transmitter is configured and arranged to formulate and broadcast a discover message from an interface of the layer three device that provides connectivity via the network to the server, the discover message indicating that the layer three device is requesting assignment of one or more Internet Protocol (IP) addresses for

the respective interface, and the message receiver is configured and arranged to receive and examine an offer sent by the at least one server, that includes one or more proffered IP addresses for assignment to the respective interface.

29. (New) A layer three device as defined in claim 28 wherein the message transmitter is configured and arranged to formulate and send to the server a request message, in response to the offer, indicating that the layer three device has accepted the proffered one or more IP addresses for the respective interface and the message receiver is configured and arranged to receive and examine an acknowledgment from the at least one server that confirms its receipt of the request message.

30. (New) A layer three device as defined in claim 28 wherein the discover message contains an option that is marked by the layer three device to indicate that it is requesting assignment of one or more Internet Protocol (IP) addresses for the respective interface.

31. (New) A layer three device as defined in claim 30 wherein the option contains a name of a subnet associated with the respective interface.

32. (New) A layer three device as defined in claim 28 wherein the offer contains an option marked by the server and containing a number indicating a number of IP subnets and addresses being proffered.

33. (New) A layer three device as defined in claim 28 wherein the offer includes a variable length IP address bearer option.

34. (New) A layer three device as defined in claim 28 wherein the offer message a includes a routing parameter option.

35. (New) A layer three device for connection to a computer network having at least one server, the layer three device having a plurality of interfaces each representing a logical connection to the computer network, the layer three device comprising:

a message transmitter connected to the computer network; and

a message receiver connected to the computer network,

wherein the message transmitter is configured and arranged to formulate and broadcast a discover message from an interface of the layer three device that provides connectivity via the network to the server, the discover message indicating that the layer three device is requesting assignment of one or more Internet Protocol (IP) addresses for an interface lacking connectivity to the at least one server, and the message receiver is configured and arranged to receive and examine an offer sent by the at least one server, that includes at least one or more proffered IP addresses for assignment to the interface lacking connectivity to the at least one server.

36. (New) A layer three device as defined in claim 35 wherein the message transmitter is configured and arranged to formulate and send to the server a request message, in response to the offer, indicating that the layer three device has accepted the proffered one or more IP addresses for the respective interface and the message receiver is configured and arranged to receive and examine an acknowledgment from the at least one server that confirms its receipt of the request message.

37. (New) A layer three device as defined in claim 35 wherein the discover message contains an option that is marked by the layer three device to indicate that it is requesting assignment of one or more IP addresses for an interface lacking connectivity to the at least one server.

38. (New) A layer three device as defined in claim 35 wherein the offer contains an option that is marked by the at least one server to indicate that the corresponding message contains one or more proffered IP addresses for assignment to the interface lacking connectivity to the at least one server.

39. (New) A layer three device as defined in claim 35 wherein the offer includes a variable length IP address bearer option.

40. (New) A layer three device as defined in claim 35 wherein the offer message a includes a routing parameter option.

41. (New) A method for automatically assigning a new subnet to a subnetwork having an existing subnet, the subnetwork including one or more layer three devices and a plurality of hosts, the method comprising:

monitoring the utilization of the existing subnet by the subnetwork;

determining whether the utilization of the existing subnet exceeds one or more pre-defined thresholds; and

in response to the determining step:

a) allocating a new subnet for use by the subnetwork and

b) sending a reconfiguration message to each layer three device having an interface coupled to the subnetwork wherein the message contains an address of the interface.

42. (New) A method as defined in claim 41 further comprising:

receiving a first acknowledgment message from a layer three device; and

in response to receiving the first acknowledgment message, sending an acknowledgment message containing an Internet Protocol (IP) address from the newly allocated subnet to the layer three device.

43. (New) A method as defined in claim 42 further comprising receiving a second acknowledgment message from the layer three device containing the IP address from the newly allocated subnet.

44. (New) A computer readable medium comprising computer executable instructions for:

broadcasting a discover message, the discover message indicating that a layer three device is requesting assignment of an overall Internet Protocol (IP) address to a plurality of interfaces of the layer three device;

receiving an offer message, in response to the discover message, the offer message including a proffered IP address for use as the overall IP address;

sending a request message, in response to the offer message, the request message indicating that the layer three device has accepted the proffered overall IP address;

receiving an acknowledgment, in response to the request message, confirming receipt of the request message; and

committing the accepted overall IP address to the plurality of interfaces of the layer three device in response to the acknowledgment.

45. (New) A computer readable medium comprising computer executable instructions for:

broadcasting a discover message only from an interface of a layer three device that provides connectivity via the network to a server, the discover message indicating that the layer three device is requesting assignment of one or more Internet Protocol (IP) addresses for the respective interface;

receiving an offer message, in response to the discover message, the offer message including one or more proffered IP addresses for assignment to the respective interface;

sending a request message, in response to the offer message, the request message indicating that the layer three device has accepted the proffered one or more IP addresses for the respective interface;

receiving an acknowledgment, in response to the request message, confirming receipt of the request message; and

committing the accepted IP address at the respective interface of the layer three device in response to the acknowledgment.

46. (New) A computer readable medium comprising computer executable instructions for:

broadcasting a discover message only from an interface of a layer three device that provides connectivity via the network to a server, the discover message indicating that the layer three device is requesting assignment of one or more Internet Protocol (IP) addresses for an interface lacking connectivity to the server;

receiving an offer message, in response to the discover message, the offer message including at least one or more proffered IP addresses for assignment to the interface lacking connectivity to the server;

sending a request message, in response to the offer message, the request message indicating that the layer three device has accepted the proffered one or more IP addresses for the interface lacking connectivity to the server;

receiving an acknowledgment, in response to the request message, confirming receipt of the request message; and

committing the accepted IP address at the interface lacking connectivity to the server of the layer three device in response to the acknowledgment.

47. (New) A computer readable medium comprising computer executable instructions for:

monitoring the utilization of an existing subnet of a subnetwork;

determining whether the utilization of the existing subnet exceeds one or more pre-defined thresholds;

in response to the instructions for determining, allocating a new subnet for use by the subnetwork; and

assigning at least one Internet Protocol (IP) address from the newly allocated subnet to one or more layer three switches disposed within the subnet.

48. (New) A computer readable medium as defined in claim 48 comprising computer executable instructions for:

assigning an IP address from the newly allocated subnet to each host that issues a request to renew its IP address;

forcing any hosts that have not been assigned an IP address from the newly allocated subnet to discard their original IP address and request a new IP address; and

in response to the instructions for forcing, assigning an IP address from the newly allocated subnet to each host that was forced to discard its original IP address.